

**RAJAGIRI SCHOOL OF ENGINEERING & TECHNOLOGY
(AUTONOMOUS)**

B.TECH. DEGREE PROGRAMME

**FIRST SEMESTER
(2020 ADMISSIONS)**

100908/PH922S	ENGINEERING PHYSICS LAB
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SYLLABUS

Rajagiri Valley, Kakkanad,
Kochi 682 039, Kerala, INDIA
www.rajagiritech.ac.in

COURSE CODE	COURSE NAME	L	T	P	CREDIT	YEAR OF INTRODUCTION
100908/PH922S	ENGINEERING PHYSICS LAB	0	0	2	1	2020

1. Preamble: The aim of this course is to make the students gain practical knowledge to co-relate with the theoretical studies and to develop practical applications of engineering materials and use the principle in the right way to implement the modern technology.

2. Prerequisite: Higher secondary level Physics

3. Syllabus

LIST OF EXPERIMENTS

(Minimum 8 experiments should be completed)

1. CRO-Measurement of frequency and amplitude of wave forms
2. Measurement of strain using strain gauge and Wheatstone bridge
3. LCR Circuit – Forced and damped harmonic oscillations
4. Melde’s string apparatus- Measurement of frequency in the transverse and longitudinal mode
5. Wave length measurement of a monochromatic source of light using Newton’s Rings method.
6. Determination of diameter of a thin wire or thickness of a thin strip of paper using air wedge method.
7. To measure the wavelength using a millimeter scale as a grating.
8. Measurement of wavelength of a source of light using grating.
9. Determination of dispersive power and resolving power of a plane transmission grating
10. Determination of the particle size of lycopodium powder
11. Determination of the wavelength of He-Ne laser or any standard laser using diffraction grating

12. Calculate the numerical aperture and study the losses that occur in optical fiber cable.
13. I-V characteristics of solar cell.
14. LED Characteristics.
15. Ultrasonic Diffractometer- Wavelength and velocity measurement of ultrasonic waves in a liquid
16. Deflection magnetometer-Moment of a magnet- Tan A position.

4. Reference Books

1. S.L.Gupta and Dr.V.Kumar, "Practical physics with viva voice", Pragati PrakashanPublishers, Revised Edition, 2009
2. M.N.Avadhanulu, A.A.Dani and Pokely P.M, "Experiments in Engineering Physics", S.Chand&Co, 2008
3. S. K. Gupta, "Engineering physics practicals", Krishna Prakashan Pvt. Ltd., 2014
4. P. R. Sasikumar "Practical Physics", PHI Ltd., 2011.

5. Course Outcomes: After the completion of the course the student will be able to

- CO1: Develop analytical/experimental skills and impart prerequisite hands on experience for engineering laboratories
- CO2: Understand the need for precise measurement practices for data recording.
- CO3: Understand the principle, concept, working and applications of relevant technologies and comparison of results with theoretical calculations
- CO4: Analyze the techniques and skills associated with modern scientific tools such as lasers and fiber optics
- CO5: Develop basic communication skills through working in groups in performing the laboratory experiments and by interpreting the results

6. Mapping of course outcomes with program outcomes:

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3				3			1	2			1
CO 2	3				3			1	2			1
CO 3	3				3			1	2			1
CO 4	3				3			1	2			1
CO 5	3				3			1	2			1

7. Mark Distribution

Total	CIE			
	Attendance	Internal Examination	Lab work/ Record/Viva-voce	Total
100	20	30	50	100

8. End Semester Examination Pattern

Written Objective Examination of one hour